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PATENT & TRADEMARK OFFICE

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Attorney Docket No. 010315-092

# IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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| In re Patent Application of | |
| Kent MALMGREN et al. | Group Art Unit: 1771 |
| Application No.: 09/651,130 | Examiner: Victor S. Chang |
| Filed: August 30, 2000 | Confirmation No.: 1064 |
| For: ABSORBENT FOAM MATERIAL, A METHOD OF PRODUCING IT AND AN ABSORBENT STRUCTURE CONTAINING SAID FOAM MATERIAL | Appeal No.: 1 |

## APPEAL BRIEF – TRANSMITTAL LETTER

**Mail Stop APPEAL BRIEF - PATENTS**
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Enclosed is an Appeal Brief for the above-identified patent application.

☐ A Petition for Extension of Time is also enclosed.

☒ A check covering the ☐ $250.00 (2402) ☒ $500.00 (1402) Government fee is filed herewith.

☐ Charge ☐ $250.00 (2402) ☐ $500.00 (1402) to Credit Card. Form PTO-2038 is attached.

The Commissioner is hereby authorized to charge any appropriate fees under 37 C.F.R. §§1.16, 1.17, and 1.21 that may be required by this paper, and to credit any overpayment, to Deposit Account No. 02-4800. This paper is submitted in duplicate.

Respectfully submitted,

Burns, Doane, Swecker & Mathis, L.L.P.

Date August 31, 2005

By: T.D. Boone
Travis D. Boone
Registration No. 52,635

P.O. Box 1404
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Attorney's Docket No. 010315-092

# IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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## APPEAL BRIEF

**Mail Stop APPEAL BRIEF - PATENTS**
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

This appeal is from the decision of the Primary Examiner dated April 8, 2005, Paper No. 1, finally rejecting claims 1, 2, 4-13, 15 and 20, which are reproduced as the Claims Appendix of this brief.

☒ A check covering the ☐ \$250.00 (2402) ☒ \$500.00 (1402) Government fee is filed herewith.

☐ Charge ☐ \$250.00 (2402) ☐ \$500.00 (1402) to Credit Card. Form PTO-2038 is attached.

The Commissioner is hereby authorized to charge any appropriate fees under 37 C.F.R. §§1.16, 1.17, and 1.21 that may be required by this paper, and to credit any overpayment, to Deposit Account No. 02-4800.

09/01/2005 SZEWDIE1 00000023 09651130
01 FC:1402 500.00 OP

# Table of Contents

## I. Real Party in Interest

The present application is assigned to SCA Hygiene Products AB which is the real party in interest.

## II. Related Appeals and Interferences

The Appellants' legal representative, or assignee, does not know of any other appeal or interferences which will affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

## III. Status of Claims

Claims 1, 2, 4-13, 15 and 20 are pending, rejected and presently appealed. Claims 3, 14 and 16-19 are canceled and not appealed.

## IV. Status of Amendments

No amendments have been filed subsequent to final rejection.

## V. Summary of Claimed Subject Matter

Embodiments of the present invention relate generally to liquid absorbent open-cell polymeric foam material having properties which make it suitable for use as an absorbent structure in absorbent articles. Page 1, lines 3-7.

In a preferred embodiment, the foam is built of a continuous three-dimensional network or cellular structure of a solid, which surrounds a gaseous phase dispersed therein. Preferably, the solid phase is a polymeric material, which forms the cell walls in a continuous cellular phase. The cells may have different shape, size, and topography and be open or closed. Preferably, the cell structure is open, which means that the cells communicate with each other. The term foam, as defined according to the present invention, also encompasses materials where fibers of different types are integrated in the cell structure. Page 4, lines 13-20.

A preferred open-cell polymeric foam material has multifunctional absorption properties: absorption acquisition capacity, distribution capacity and storage

capacity. The material should thus be able to simultaneously fulfill the functions of a liquid acquisition layer, distribution layer and storage layer. Page 5, lines 1-5.

In order that an absorbent material will have the desired multifunctional properties, it is desirable to have absorption capacity in two different forms, capillary liquid and gel liquid. Gel liquid refers to liquid held in pores smaller than 3 μm and capillary liquid refers to loosely bound liquid in pores larger than 3 μm and up to 500 μm. Gel liquid is the liquid that is held most firmly in the structure. It is preferable that the gel liquid absorption, determined as the total amount of liquid in pores below 3 μm, according to PVD measurements, is at least 4 g/g and more preferably at least 5 g/g of synthetic urine. The capillary liquid absorption, determined as the total amount of liquid in pores between 3-100 μm, according to PVD measurements, is preferably at least 8 mL/g, more preferably at least 10 mL/g. Page 5, lines 20-29.

The foam should have defined values of liquid acquisition, distribution and storage capacity. Thus, in a preferred embodiment, it should have an absorption rate at wetting of at least 0.4 ml/s for a round sample having a 50 mm diameter, a liquid distribution capacity at an inclination of 30° of at least 15 g/g and a liquid storage capacity of at least 9% measured through centrifuge retention capacity, for synthetic urine test liquid. Page 5, line 31 – Page 6, line 7.

## VI. Grounds of Rejection to be Reviewed on Appeal

Claims 1-2, 4-13, 15 and 20 stand rejected under 35 U.S.C. § 102(e) as anticipated by, or in the alternative, under 35 U.S.C. § 103(a) as obvious over *Chen et al.*, U.S. Patent No. 6,261,679.

## VII. Argument

The rejected claims are directed to liquid absorbent materials comprising a pore size distribution between 0 and 3 μm and liquid storage capacity of at least 9% measured through centrifuge retention capacity. As stated above, an absorbent material with pore sizes in this distribution is able to store liquid in a unique form, i.e., as gel liquid, which is held firmly in the absorbent material. This is a different type of liquid storage than results from capillary pressure which stores capillary liquid in

pores of sizes from greater than 3 μm to 500 μm. The gel liquid absorption is a different form of absorption than the loosely bound capillary liquid absorption.

Centrifuge retention capacity is a measure of the relative amount of absorbed liquid (measured by free swell capacity) that is held firmly in the foam structure in pores of a size up to 3 μm and is not released upon centrifugation.

A. *Chen et al.* Does Not Disclose Pore Sizes Smaller than 20 μm

The Examiner has asserted that a disclosure in *Chen et al.*, at Column 42, lines 31-38, of

> the absolute diameter of the cells defined by the foamable binder material can be about 3 mm [3000 μm] or less; specifically about 1 mm [1000 μm] or less, more specifically about 0.3 mm [300 μm] or less, still more specifically about 0.1 mm [100 μm] or less, and most specifically from about 0.02 mm to about 0.2 mm [20 μm to about 200 μm]

anticipates the claimed range of pore sizes between 0 and 3 μm. Essentially, the Examiner is asserting that a disclosure of "or less" anticipates all pores sizes down to zero. Applicants respectfully disagree.

Applicants assert that a prior art reference must be considered in its entirety, i.e. as a whole. *W.L. Gore & Assocs. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983). Applicants contend that the disclosure of *Chen et al.*, when properly considered as a whole, does not anticipate the present claims, specifically the claimed range of pore sizes between 0 and 3 μm.

A disclosure of pore sizes of 3000 μm or less does not teach one skilled in the art a pore size between 0 and 3 μm. The simple inclusion of "or less" does not provide a disclosure of each and every pore size under 3000 μm all the way to zero. Specifically, when read as a whole, it is clear to one skilled in the art that *Chen et al.* does not contemplate a pore size less than 20 μm. This is evidenced at least by the description cited above from Column 42, lines 31-38, and because there is no other

discussion of a pore size smaller than 20 μm. *Chen et al.* is deficient of a teaching of a pore size less than 20 μm.

Moreover, the remaining disclosure of *Chen et al* further exposes that *Chen et al.* is deficient of a teaching of a pore size less than 20 μm. No other discussion in *Chen et al.* demonstrates a teaching of material with a pore size between 0 and 3 μm. Examples 1-6 in *Chen et al.*, at Columns 43-48, do not disclose a pore size between 0 and 3 μm. Producing a foam material with properties according to the present claims is difficult. This is especially true with the fibrous material of *Chen et al.* None of the Examples in *Chen et al.* teach methods that would appear to overcome these difficulties in order to produce a material having pore sizes between 0 and 3 μm.

As stated above, with a pore size distribution between 0 and 3 μm, the presently claimed absorbent material is able to store gel liquid. *Chen et al.* does not recognize or suggest gel liquid storage or any such manner of storage. Instead, with regard to foam absorption, *Chen et al.* is focused simply on capillary absorption.

An absorbent material may have a distribution of its absorption capacity in two different forms, capillary liquid and gel liquid. Gel liquid refers to liquid held in pores smaller than 3 μm and capillary liquid refers to loosely bound liquid in pores larger than 3 μm and up to 500 μm. Gel liquid is the liquid that is held most firmly in the structure.

The nature of the absorbent structure taught in *Chen et al.* has low capillary absorption and the *Chen et al.* teachings are focused simply on improving the capillary absorption. *Chen et al.* is focused on a primarily fibrous absorbent structure in contrast to fiber-reinforced foams. Column 1, lines 63-65. The resulting large fibrous structure pore sizes (500 – 7,000 μm)[1] offer relatively little capillary pressure. Column 42, lines 12-16. To remedy the low capillary pressure of the fibrous structure, *Chen et al.* discloses the use of open cell foam binder in a manner to also increase capillary pressure, thereby increasing capillary absorption. Thus, *Chen et*

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[1] Fibrous pore sizes are on order of the fiber length. See Column 46, lines 21-25. Average fiber length is 0.5 – 7 mm, which is 500 – 7,000 μm. Column 7, lines 47-54.

*al.* is focused on using foamable binder for the purpose of simply storing capillary liquid. *Chen et al.* does not suggest any other absorbent function for the open cell foam.

Additionally, the present claims not only define that pores smaller than 3 μm are present in the foam, but it also define that there is a certain minimum amount of the pores that have a cell diameter of 3 μm or less. This is because the present claims recite a liquid storage capacity of at least 9% measured through centrifuge retention capacity. Centrifuge retention capacity is a measure of the relative amount of absorbed liquid (measured by free swell capacity) that is held firmly in the foam structure in pores of a size up to 3 μm and is not released upon centrifugation.

Although there is not a perfect correlation between the centrifuge retention capacity method and the exact relative amount of pores of the size 0-3 μm, one skilled in the art can use the CRC method as a rough measure of the relative amount of pores in the interval 0-3 μm with respect to the total pore volume in the foam.

*Chen et al.*, in addition to not teaching a pore size of less than 3 μm, also does not teach an absorbent material with enough pores of a size of 0-3 μm in order to have a liquid storage capacity of at least 9% measured through centrifuge retention capacity.

Considering *Chen et al.* in its entirety, the disclosure of pore sizes of 3000 μm or less does not teach a pore size less than 20 μm and, therefore, does not teach the claimed invention which comprises pores with sizes between 0 and 3 μm. That is, the remainder of *Chen et al.* does not teach one skilled in the art to view the disclosure of pore sizes of 3000 μm or less as providing a disclosure of pore sizes all the way to zero. Moreover, *Chen et al.* does not teach an absorbent material with enough pores of a size of 0-3 μm in order to have a liquid storage capacity of at least 9% measured through centrifuge retention capacity.

Claims 1-2, 4-13, 15 and 20 are, thus, not anticipated by *Chen et al.*

Additionally, claims 10-12 and 20 recite that the foam material has a distribution of pores with a diameter less than 3 μm which produces a gel liquid absorption of at least 4 g/g synthetic liquid. As discussed above, *Chen et al.* does

not teach a pore size less than 20 μm, and also does not teach or suggest gel liquid absorption. Therefore, with no teaching of the necessary pore sizes or of any gel liquid absorption, *Chen et al.* clearly does not teach or suggest gel liquid absorption of at least 4 g/g. Thus, *Chen et al.* does not teach every element of claims 10-12 and 20, particularly gel liquid absorption of at least 4 g/g, and claims 10-12 and 20 are not anticipated.

B. Claims Encompass a Critical Range

In spite of the foregoing arguments, in the event that *Chen et al.* is construed to overlap the claimed range and result in a prima facie case of obviousness, the resulting prima facie case of obviousness is rebutted because of the criticality of the claimed range.

A prima facie case of obviousness based on overlapping ranges can be rebutted by showing criticality of the claimed range. See *In re Woodruff*, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990).

The claimed range of pore sizes between 0 and 3 μm is a critical range. The range of pore sizes between 0 and 3 μm is a critical range because pores of only about that size are able to store liquid in a unique form, gel liquid. See the *Declaration of Kent Malmgren*, Paragraph 5, previously filed on June 2, 2004. Gel liquid is held firmly in the absorbent material of the present claims. All other pores of sizes greater than about 3 μm hold, at best, capillary liquid. Capillary liquid absorption is a different form of absorption that is more loosely bound than gel liquid.

| **Pore Size** | **Between 0 and 3 μm** | **> 3 μm** |
|---|---|---|
| **Liquid Storage** | Gel Liquid<br>NO Capillary Liquid | NO Gel Liquid<br>Capillary Liquid |

Thus, the claimed range compared with the range disclosed in the prior art shows a "marked improvement," so as to be a difference in kind, rather than one of degree. The "marked improvement" is the capability to store gel liquid, a capability which is absent from prior art ranges. Therefore the claimed range of pore sizes

between 0 and 3 μm is a critical range and no case of prima facie obviousness exists. In view thereof, Applicants respectfully request that the rejection of the claims under 35 U.S.C. § 103(a) be withdrawn.

C. The Claimed Range Is Not Disclosed in *Chen et al.* With Sufficient Specificity

An interpretation of the disclosure of *Chen et al.*, specifically the "less than" language, as resulting in a disclosure of pore sizes all the way to zero still does not result in anticipation of the claimed invention because the claimed range of pore sizes between 0 and 3 μm is not disclosed with sufficient specificity.

Because the claims are directed towards a narrow range, the claimed range must be disclosed in *Chen et al.* with "sufficient specificity" to constitute an anticipation of the claims. See MPEP § 2131.03. Stated another way, one of skill in the art is not able to "at once envisage" the claimed range of pore sizes between 0 and 3 μm from the disclosure of *Chen et al.* That is, the present claims are directed to a narrow range (pore sizes of 0-3 μm), the reference teaches a broad range (pore sizes of 3000 μm or less), the presently claimed range is a critical range (capability to store gel liquid) and based on the above discussion, applicants assert that the narrowly claimed range is not disclosed with sufficient specificity in *Chen et al.* to constitute an anticipation of the claimed range.

A disclosure of pore sizes of 3000 μm or less does not disclose with sufficient specificity a pore size between 0 and 3 μm. The simple inclusion of "or less" does not provide a specific disclosure of each and every pore size under 3000 μm all the way to zero. Further, the disclosure of a preferred range of 20 μm to 200 μm does not provide any specificity for the narrow range of pore sizes between 0 and 3 μm.

Moreover, the insufficiency of the specificity of *Chen et al.* is not remedied by the remaining disclosure of *Chen et al.* No other discussion in *Chen et al.* demonstrates with any specificity, let alone sufficient specificity, a pore size between 0 and 3 μm. Examples 1-6 in *Chen et al.*, at Columns 43-48, do not disclose with sufficient specificity a pore size between 0 and 3 μm, as none of the Examples in

*Chen et al.* teach methods that would appear to produce a material having pore sizes between 0 and 3 μm.

As stated above, with a pore size distribution between 0 and 3 μm, the presently claimed absorbent material is able to store gel liquid. *Chen et al.* does not recognize or suggest gel liquid storage or any such manner of storage. Instead, with regard to foam absorption, *Chen et al.* is focused simply on capillary absorption. No gel liquid absorption, and therefore pore sizes between 0 and 3 μm, is disclosed with sufficient specificity.

Thus, because the claimed range is not disclosed with sufficient specificity in *Chen et al.*, the present claims are not anticipated.

D. No Motivation To Modify *Chen et al.*

As discussed above, the disclosure of *Chen et al.* does not teach the present claims, specifically the claim limitation that the absorbent material comprises pores with sizes between 0 and 3 μm. There is nothing in *Chen et al.* that would have motivated persons skilled in the art to modify the disclosed pore sizes of *Chen et al.* in a manner to arrive at the presently claimed range. The disclosure of "or less" would not have motivated persons skilled in the art to incorporate pores of a size between 0 and 3 μm. The disclosure of pore sizes of 20 μm to 200 μm provides no motivation for one skilled in the art to modify the pores to sizes below 20 μm, let alone down to the claimed range of pore sizes between 0 and 3 μm.

Moreover, the unique manner of storing liquid, gel liquid, which can be accomplished at this pore size, is not obvious based on the disclosure of *Chen et al.*

*Chen et al.* is focused on a primarily fibrous absorbent structure in contrast to fiber-reinforced foams. Column 1, lines 63-65. The resulting large fibrous structure pore sizes (500 – 7,000 μm) offer relatively little capillary pressure. Column 42, lines 12-16. To remedy the low capillary pressure of the fibrous structure, *Chen et al.* discloses the use of open cell foam binder in a manner to also increase capillary pressure, thereby increasing capillary absorption. Thus, *Chen et al.* is focused on using foamable binder for the purpose of simply storing capillary liquid. *Chen et al.* does not suggest any other absorbent function for the open cell foam. Therefore,

based on the disclosure of *Chen et al.*, one skilled in the art would not be motivated to incorporate gel liquid storage, or the accompanying pore size between 0 and 3 μm, in an absorbent material.

Moreover, no discussion in *Chen et al.* suggests or provides motivation to modify *Chen et al.* to reach a pore size between 0 and 3 μm. The Examples in *Chen et al.*, at Columns 43-48, do not suggest a pore size between 0 and 3 μm and none of the Examples in *Chen et al.* suggest methods that would appear to overcome these difficulties in order to produce a material having pore sizes between 0 and 3 μm.

Additionally, the present claims not only define that pores smaller than 3 μm are present in the foam, but it also define that there is a certain minimum amount of the pores that have a cell diameter of 3 μm or less. This is because the present claims recite a liquid storage capacity of at least 9% measured through centrifuge retention capacity. Centrifuge retention capacity is a measure of the relative amount of absorbed liquid (measured by free swell capacity) that is held firmly in the foam structure in pores of a size up to 3 μm and is not released upon centrifugation.

Although there is not a perfect correlation between the centrifuge retention capacity method and the exact relative amount of pores of the size 0-3 μm, one skilled in the art can use the CRC method as a rough measure of the relative amount of pores in the interval 0-3 μm with respect to the total pore volume in the foam.

*Chen et al.*, in addition to not teaching or suggesting a pore size of less than 3 μm, also does not teach or suggest an absorbent material with enough pores of a size of 0-3 μm in order to have a liquid storage capacity of at least 9% measured through centrifuge retention capacity.

Therefore, *Chen et al. et al.* would not have made the present invention, as defined in the rejected claims, obvious since there is no motivation or suggestion provided to prepare a material with cells or pores of sizes between 0 and 3 μm. In view thereof, Applicants respectfully request that the rejection of claims 1-2, 4-13, 15 and 20 under 35 U.S.C. § 103(a) be withdrawn.

Additionally, claims 10-12 and 20 recite that the foam material has a distribution of pores with a diameter less than 3 μm which produces a gel liquid absorption of at least 4 g/g synthetic liquid. As discussed above, *Chen et al.* does not teach or suggest a pore size between 0 and 3 μm, and also does not teach or suggest gel liquid absorption. Therefore, with no teaching or suggestion of the necessary pore sizes or of any gel liquid absorption, *Chen et al.* clearly does not teach or suggest gel liquid absorption of at least 4 g/g. That is, one skilled in the art reviewing *Chen et al.* would not be motivated to provide a distribution of pores with a diameter less than 3 μm such that the pores produce a gel liquid absorption of at least 4 g/g synthetic liquid. Thus, *Chen et al.* does not teach or suggest every element of claims 10-12 and 20, particularly gel liquid absorption of at least 4 g/g, and claims 10-12 and 20 are not obvious over *Chen et al.*

## VIII. Claims Appendix

See attached Claims Appendix for a copy of the claims involved in the appeal.

## IX. Evidence Appendix

See attached Evidence Appendix for copies of evidence relied upon by Appellant.

Respectfully submitted,
Buchanan Ingersoll PC

Date August 31, 2005

By: T.D. Boone

Travis D. Boone
Registration No. 52,635

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## VIII. CLAIMS APPENDIX

**The Appealed Claims**

1. (Previously presented) A liquid absorbent material comprising an open-cell polymeric foam material comprising either polysaccharide or polypeptide, the foam material comprising a distribution of pore sizes between 0 and 3 μm, the foam material having an absorption rate at wetting of at least 0.4 ml/s for a round sample having a 50 mm diameter, a liquid distribution capacity at an inclination of 30° of at least 15 g/g and a liquid storage capacity of at least 9% measured through centrifuge retention capacity, for synthetic urine test liquid.

2. (Previously presented) A liquid absorbent material as claimed in claim 1, wherein the absorption rate at wetting is at least 0.5 ml/s, the liquid distribution capacity at an inclination of 30° is at least 16 g/g, and the liquid storage capacity measured through centrifuge retention capacity is at least 11%.

4. (Previously presented) A liquid absorbent material as claimed in claim 1, wherein the foam material contains fibers in its pore system.

5. (Previously presented) An absorbent structure in an absorbent article, wherein the absorbent structure comprises a liquid absorbent material according to claim 1.

6. (Previously presented) An absorbent structure as claimed in claim 5, wherein said absorbent structure is comprised solely of said foam material.

7. (Previously presented) An absorbent structure as claimed in claim 5, wherein the foam material has a three-dimensional anatomic shape.

8. (Previously presented) A liquid absorbent material as set forth in claim 1, wherein the liquid absorbent material is used in an absorbent structure in an absorbent article and the absorbent article is a diaper, a pant diaper, a sanitary napkin, an incontinence guard, a wound dressing, or a bed protection.

9. (Previously presented) An absorbent structure in an absorbent article as claimed in claim 5, wherein the absorbent article is a diaper, a pant diaper, a sanitary napkin, an incontinence guard, a wound dressing, or a bed protection.

10. (Previously presented) A liquid absorbent material as claimed in claim 20, wherein the gel liquid absorption is at least 5 g/g synthetic urine.

11. (Previously presented) A liquid absorbent material as claimed in claim 20, wherein the capillary liquid absorption is at least 10 ml/g synthetic urine.

12. (Previously presented) A liquid absorbent material as claimed in claim 20, wherein the gel liquid absorption is at least 5 g/g synthetic urine and the capillary liquid absorption is at least 10 ml/g synthetic urine.

13. (Previously presented) A liquid absorbent material comprising an open-cell polymeric foam material comprising either polysaccharide or polypeptide, the foam material having a first distribution of pore sizes between 0 and 3 μm and a second distribution of pore sizes between 3 and 100 μm, the foam material having an absorption rate at wetting of at least 0.4 ml/s for a round sample having a 50 mm diameter, a liquid distribution capacity at an inclination of 30° of at least 15 g/g, and a liquid storage capacity of at least 9% measured through centrifuge retention capacity, for synthetic urine test liquid.

15. (Previously presented) A liquid absorbent material comprising an open-cell polymeric foam material comprising either polysaccharide or polypeptide, the foam material having a first distribution of pore sizes between 0 and 3 μm and a second distribution of pore sizes between 3 and 500 μm, the foam material having an absorption rate at wetting of at least 0.4 ml/s for a round sample having a 50 mm diameter, a liquid distribution capacity at an inclination of 30° of at least 15 g/g, and a liquid storage capacity of at least 9% measured through centrifuge retention capacity, for synthetic urine test liquid.

20. (Previously presented) A liquid absorbent material comprising an open-cell polymeric foam material comprising either polysaccharide or polypeptide,

the foam material having an absorption rate at wetting of at least 0.4 ml/s for a round sample having a 50 mm diameter, a liquid distribution capacity at an inclination of 30° of at least 15 g/g, a liquid storage capacity of at least 9% measured through centrifuge retention capacity, for synthetic urine test liquid, a first distribution of pores with a diameter less than 3 μm which produces a gel liquid absorption of at least 4 g/g synthetic urine, and a second distribution of pores with a diameter between 3 and 100 μm which produces a capillary liquid absorption of at least 8 ml/g.

## IX. EVIDENCE APPENDIX

*Declaration of Kent Malmgren*, previously filed on June 2, 2004, is attached hereto.

Patent
Attorney's Docket No. 010315-092

# IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

| | | |
|---|---|---|
| In re Patent Application of | ) | |
| Kent Malmgren et al. | ) | Group Art Unit: 1771 |
| Application No.: 09/651,130 | ) | Examiner: Victor S. Chang |
| Filed: August 3, 2000 | ) | Confirmation No.: 1064 |
| For: Absorbent Foam Material, a Method of Producing It and an Absorbent Structure Containing Said Foam Material | ) | |

## DECLARATION UNDER 37 C.F.R. § 1.132

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

I, Kent Malmgren, hereby state as follows:

1. I am one of the inventors of the subject matter disclosed and claimed in the above-referenced patent application. My education is Master of Science in Chemical Engineering from The Royal Institute of Technology, Stockholm, Sweden, and I am employed by SCA since 1986. I have mainly been active in research work and my position is research leader in the fiber chemistry area.

2. I have reviewed and am familiar with U.S. Patent No. 6,261,679, issued July 17, 2001, to Kimberly-Clark Worldwide, Inc.

3. The liquid absorbent material as defined in the rejected claims comprises an open-cell polymeric foam material. This material is suitable for use as an absorbent structure in absorbent articles. The foam material of the liquid absorbent material has an absorption rate at wetting of at least 0.4 ml/s for a round sample having a 50 mm diameter, a liquid distribution capacity at an inclination of 30° of at least 15 g/g and a liquid storage capacity of at least 9% measured through centrifuge retention capacity, for synthetic urine test liquid.

4. As described in the present application, a foam is built of a continuous three-dimensional network or cellular structure of a solid or liquid phase, which surrounds a gaseous phase dispersed therein. The liquid absorbent materials as defined in the claims comprise an open-cell polymeric foam material which liquid absorbent materials may have multifunctional absorption properties with respect to liquid acquisition capacity, distribution capacity and storage capacity. Thus, the material may simultaneously fulfill the functions of a liquid acquisition layer, distribution layer and storage layer. *Specification, pages 4-5.*

5. As further described in the application, gel liquid refers to liquid held in pores smaller than 3 μm and capillary liquid refers to loosely bound liquid in pores larger than 3 μm and up to 500 μm. Gel liquid is the liquid that is held most firmly in the structure. *Specification, page 5.* The liquid storage capacity of the foam defined in the claims may be measured by centrifuge retention capacity (CRC), which is a measure of the capacity of the foam to firmly bind gel liquid in its solid phase by swelling the cell walls. *Specification, page 2, page 8.*

6. Upon information and belief, Chen et al., U.S. Patent No. 6,261,679, describes a fibrous material, wherein a foam forming material has been added to the fibrous material to keep the fibers apart and to create an expanded and highly porous fiber structure. The Chen et al. material is defined in embodiments as a "foam-reinforced fibrous network" wherein the components of the structuring composition or foam play a relatively minor structural role in the final absorbent material, once the fibers have been properly positioned and bound. *Column 1, line 50 – column 2, line 4.* In Chen et al., the fibers form the walls in the cellular structure, thus having an open-cell foam characteristic. *See, Figures 1 and 2.*

7. Figure 4 of Chen et al. depicts an embodiment based on Figure 2 of Chen et al. in which the foam that served to structure the fibers has not collapsed, but remains partly intact as a structural component of the absorbent fibrous structure, occupying a significant portion of the void space in the cells defined by the fibers in fibrous struts. As described in Chen et al., the cells defined by the foamable binder may have a diameter from about 0.02

mm to about 0.2 mm (20 to 200 μm). *Column 41, line 55 – column 42, line 38.*

8. Upon information and belief, the liquid absorbent materials as defined in the claims of the present application are substantially different than those disclosed by Chen et al. and have different properties. The liquid storage capacity measured through centrifuge retention capacity will be significantly lower in the fiber structure disclosed by Chen et al. since the CRC method mainly measures the so-called "gel liquid", which is liquid that is firmly bound in pores smaller than 3 μm. A fibrous network of the kind shown in Chen et al., for example in Figure 2, will have a considerably lower CRC value than claimed since Chen et al. does not disclose that a part of the cells of the fiber structure described would have a size small enough to give a liquid storage capacity as claimed. The pore size of the material disclosed in Chen et al. would not provide the claimed liquid storage capacity as there is no description of the material in Chen et al. having pores of a size in which gel liquid would be bound such that the claimed liquid storage capacity may be achieved. Thus, the material of Chen et al. is different from the liquid absorbent material defined in the claims of the present application.

9. I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 81 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Name: Kent Malmgren
Kent Malmgren

Date: 2004-05-19